AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (Currently Amended) A decentralized energy control and management system, comprising:

a plurality of loads associated with a system, wherein at least one load is a member of a class;

all members of a class are connected to [[the]] an energy supply if connecting the entire class would not bring [[the]] total system demand above [[the]] an optimum level[[,]] ; and

a plurality of networked load controllers associated with respective loads, wherein the load controllers cooperate to determine which load should be shed when the total system demand exceeds an optimum limit.

2. (Original) The system of claim 1, wherein loads are shed based on a priority associated with each load.

3. (Original) The system of claim 2, wherein priority is based at least in part on load function and context.

4. (Original) The system of claim 1, wherein the load controllers communicate over a local area network (LAN).

5. (Original) The system of claim 1, wherein the load controllers communicate wirelessly.

6. (Original) The system of claim 1, wherein the load controllers communicate over a wide area network (WAN).

7. (Original) The system of claim 1, further comprising a meter to measure parameters associated with energy consumed by the system.

8. (Original) The system of claim 7, wherein the measurements are transferred to and stored by a host computer.

9. (Previously Presented) A decentralized energy demand management system comprising:

a plurality of machines;

a multitude of networked load controllers associated with the plurality of machines, wherein the controllers collaborate and execute an optimization algorithm to determine how a load should be shed across the plurality of machines, wherein the load that is shed is a member of a class and all members of the class are also shed.

10. (Original) The system of claim 9, further comprising a power supply.

11. (Original) The system of claim 9, wherein at least one of the plurality of machines is a variable speed motor such that load shedding with respect to the motor corresponds to reducing the power to the motor.

12. (Original) The system of claim 9, wherein the optimization algorithm includes parameters associated with the priority of a load.

13. (Original) The system of claim 12, wherein the optimization algorithm includes parameters associated with at least one business concern.

14. (Original) The system of claim 13, wherein the optimization algorithm includes parameters associated with the health of the machine.

15. (Original) The system of claim 9, wherein the optimization algorithm employs intelligent agents to act as proxies for the actual machines when determining the optimum load for each machine.

16. (Original) The system of claim 9, wherein the optimization algorithm utilizes a belief network.

17. (Original) The system of claim 9, wherein at least a subset of the machines are located physically remote from one another.

18. (Original) The system of claim 9, wherein the load controllers also determine which previously shed loads to reconnect.

19. (Previously Presented) A method of shedding loads to optimize system energy consumption comprising:

determining a maximum acceptable energy value;

metering the system to determine total system demand;

shedding loads according to a decision made by a plurality of networked load controllers so that the total system demand is not greater than the maximum acceptable energy value;

determining if a shed load is a member of a class; and

shedding each member of the class if the shed load is a member.

20. (Original) The method of claim 19, wherein the decision to shed loads comprises:

determining a priority associated with active loads; and

shedding active loads of a higher priority before active loads of a lower priority.

21. (Original) The method of claim 20, wherein determining a priority includes considering load function and load context.

22. (Previously Presented) The method of claim 20, wherein the decision further comprises determining whether shedding of a particular load will interfere with a business objective and not shedding the particular load if such action would interfere with a business objective.

23. (Previously Presented) The method of claim 20, wherein the decision further comprises employing a utility based analysis.

24. (Original) An article of manufacturing comprising a computer usable medium having computer readable program code means thereon to perform a method for of claim 19.

25. (Previously Presented) A method of load shedding comprising:

calculating a maximum acceptable energy consumption value;

determining total system demand;

shedding particular machine loads organized under one or more classes, according to a decision by a plurality of networked load controllers associated with the machine loads based at least on a priority assigned to each machine in the system so as to bring the total system demand below the maximum acceptable energy consumption value; and

shedding each member of a class to which the shed particular machine load belongs.

26. (Original) The method of claim 25, wherein shedding a load corresponds to reducing the power to a variable speed motor.

27. (Original) The method of claim 25, wherein the decision to shed a machine load is also based on at least one business concern.

28. (Original) The method of claim 27, wherein the decision to shed a machine load is also based on the health of the machine.

29. (Original) A computer readable medium having stored thereon computer executable instructions for carrying out the method of claim 25.

30. (Currently Amended) A method of connecting inactive loads to a power supply comprising:

polling a plurality of networked load controllers associated with loads to determine which loads are not connected to a power supply and are thereby inactive;

determining the load priorities associated with the inactive loads;

finding the highest priority load among the inactive loads; determining whether the highest priority load is a member of a class; and

connecting all members of the class to which the highest priority load is a member to the power supply if connecting the entire class would not bring [[the]] total system demand above [[the]] an optimum level.

31. (Cancelled)

32. (Original) The method of claim 30, wherein determining the load priority includes considering load function and load context.